DIPLOMA IN VETERINARY TECHNOLOGY (T45)

Course Overview

Turn your love for animals into a career and enjoy every day that you work!

This course combines theory with hands-on experience to equip you with the skills to become a competent veterinary technician. If you're keen on a career in marine science or aquaculture, this course will also prepare you well for it.

Our team of specialists will train you in veterinary care as you master procedures like animal husbandry, anaesthesia monitoring and diagnostic testing at our licensed and fully equipped TP Animal Clinic & Wellness facility. Our well-rounded curriculum will also see you acquire skills in aquatic animal and pet care.

With growing awareness about animal welfare issues and our pursuit to develop drugs and medical procedures to treat diseases, you will be exposed to animal models used in biomedical and preclinical trials. All these will help you better understand the importance of responsible and humane animal care.

Your technical competency will be further honed through a 5-month enhanced internship programme – either locally or overseas – in research institutions, aquaculture and marine animal parks/ facilities, or veterinary clinics and hospitals.

The training you'll get will prepare you for a vast range of job opportunities in the aquaculture, veterinary care, and biomedical research industries.

Get the opportunity to attain the below certification(s) throughout the course of your study:

- Responsible Care and Use of Fish (RCUF) certificate
- Responsible Care and Use of Laboratory Animals (RCULA) certificate

DIVERSE CURRICULUM
A broad-based curriculum enables you to join various sectors, from aquaculture, veterinary care and clinical practices to biomedical research.

REAL-WORLD EXPERIENCE
Get skills-based clinical training at our on-campus TP Animal Clinic & Wellness facility to build competencies in providing veterinary assistance in a real-world setting.

ADVANCED TECHNOLOGY
Gain valuable hands-on experiences in aquaculture through project-based learning at the Centre for Aquaculture & Veterinary Science – a purpose-built, innovative and technology-driven centre.

Entry Requirements

To be eligible for consideration for admission, applicants must obtain 26 points or better for the net ELR2B2 aggregate score (i.e. English Language, 2 relevant subjects and best 2 other subjects, including CCA Bonus Points) and meet the minimum entry requirements of this course. CCA cannot be used to meet the minimum entry requirements.

Subject	Grade
English Language (EL1)*	1-7
Mathematics (E or A)	1-6
One of the following Science subjects: • Biology • Biotechnology • Chemistry • Combined Science • Food & Nutrition • Physics/Engineering Science • Science (Chemistry, Biology) • Science (Physics, Biology) • Science (Physics, Chemistry)/Physical Science	1-6
Any two other subjects, excluding CCA	
2023 Planned Intake	**45**
Net ELR2B2 aggregate range (2023 JAE)	**5 - 9**

Note: *Applicants with complete colour appreciation deficiency are not eligible to apply.*

What You'll Learn

YEAR 1 | YEAR 2 | YEAR 3 | TPFUN

You will begin your journey by building a strong broad-based foundation through core subjects ranging from microbiology, cell biology, mathematics to conservation, nutrition and workplace safety.

Core Subjects

Subject Code	Subject	Credit Units
AMB1005	**Basic Microbiology** This subject investigates the important fundamentals of microbiology and its relevance to the food, biomedical and biotechnology industries. It covers the types of microorganisms, their cultivation and growth as well as their control.	4
AMT1004	**Cell Biology & Biochemistry** This subject introduces the biology of cells and the structure-function relationship of cells, cellular membranes and organelles. It covers basic concepts of organic chemistry and the structure-property relationship of essential biomolecules. Basic laboratory skills involving the study of cell structures with the use of cell staining and microscopy techniques, as well as basic biochemical analysis will also be introduced.	5
AMA1008	**Digitalisation in Applied Science** This subject covers the basic concept of data analytics as well as the processes of data cleaning, processing and visualisation of data in the contexts of applied science. Basic coding and fundamental computational thinking constructs such as variables, data type and logic will also be addressed.	2
APH1004	**Laboratory & Workplace Safety**	3

	This subject covers an introduction to Good Laboratory Practice, and the identification and classification of biological, chemical, physical and ergonomic hazards at the workplace and laboratories. It also involves the conduct of risk assessment, risk controls and monitoring as well as communication of these risks to all persons involved in compliance with the Workplace Safety and Health (Risk Management) Regulations.		
AMA1003	**Mathematics for Applied Science** This subject covers algebra, differentiation, integration and their applications in applied science contexts.	**3**	^
ANT1005	**Nutrition & Health** This subject examines the relationship between food, nutrition and health. It provides an introduction to macro- and micro- nutrients in relation to the well-being of the human body. It covers food sources of these nutrients and their interrelationships as well as the use of basic nutritional tools like My Healthy Plate, food composition tables and online nutritional databases for basic nutritional analysis.	**3**	^
ACH1009	**Principles of Inorganic & Physical Chemistry 1** This subject covers the basic theory and practical knowledge of inorganic and physical chemistry. Topics include fundamentals of chemistry, atomic structure and chemical bonding, stoichiometry and equilibria concepts of a chemical reaction.	**4**	^
AMA1004	**Statistics for Applied Science** This subject provides you with the basic statistical techniques that are essential for your course of study. Topics covered include basic probability and distributions, basic	**3**	^

probability and distributions, basic statistics, sampling distribution, hypothesis testing, analysis of variance and chi-square testing.

YEAR 1 | YEAR 2 | YEAR 3 | TPFUN

Strengthen your knowledge of the key concepts and build skills in the veterinary-related content during your second year. You can dabble in a variety of subjects in aquatic and veterinary studies to discover your passion, and get involved with interesting field studies and community service projects designed to enhance your learning.

Core Subjects

Subject Code	Subject	Credit Units
AVT1006	**Animal Anatomy & Physiology** This subject covers an introduction to veterinary anatomy related to systematic, applied and comparative anatomy. It also covers veterinary physiology in relation to anatomy, using the basic principle of form and function, to explain the functions of the various organ systems.	4
AVT1012	**Animal Welfare & Nutrition** This subject covers an introduction to the care and behaviour of animals, with emphasis on domestic companion species. The fundamental principles and practical application will be elaborated in the sub-topics of handling and restraint, animal housing and environmental conditions, animal management with respect to behaviour under different conditions, application of first aid and wound management, animal nutrition, and preventative health programs.	5
AVT2029	**Aquatic Care, Health & Nutrition** This subject covers various aspects of aquatic care, health and diseases. Topics will include care and husbandry, health management and good practices, diseases, nutrition, control and prevention of fish	4

	diseases. Various laboratory and diagnostic test used for identifying fish disease pathogens will also be covered.		
AVT2018	**Clinical Diagnostic Techniques** This subject introduces students to laboratory procedures and covers the basic knowledge and technical skills to perform various tests used for the evaluation of health and disease. It emphasizes on the importance of sample collection and handling and processes for the study of animal disease. The processes and principles used to evaluate pancreatic, liver, kidney and other organ functions are also included.	**4**	^
AVT2023	**Clinical Practicum** This subject consolidates theoretical knowledge and practical nursing skills. It covers the core skill sets of veterinary technicians to manage the daily operations of a veterinary clinic, including administrative and nursing procedures, safety standards, and laboratory procedures.	**5**	^
AVT2027	**Veterinary Immunology & Pathology** This subject covers fundamental concepts in general pathology, immunology and common diseases found in companion animals. The causes, pathogenesis, clinical signs, diagnostic tests, treatments and prevention will be discussed. The principles and skills of histotechnology will also be included in this subject.	**5**	^
AVT2028	**Veterinary Pharmacology, Surgery & Anaesthesia** This subject addresses principles of surgery and anaesthesia management, pharmacology and nursing. Topics will also include anaesthetic administration, monitoring	**5**	^

	and recovery of animal from anaesthesia, surgical and dental procedures, anaesthetic and surgical equipment, and basic suturing skills.	
AVT2030	**Professional Veterinary Practice** This subject covers the roles and responsibilities of veterinary technicians, as well as the ethical and the professional requirements of a veterinary practice. The subject also introduces students to business start-up basic concepts and veterinary legislation. Emphasis will also be given to topics on professional communication skills, compassion fatigue, and the relationship of One Health and veterinary practice.	**3**

YEAR 1 YEAR 2 **YEAR 3** TPFUN

In your third year, you will gain practical work experience through your choice to specialise in either fields of aquaculture or veterinary. You can look forward to exciting internships in various industries such as research laboratories, fish farms, wildlife reserves, veterinary clinics and universities.

Core Subjects

Subject Code	Subject	Credit Units
AMP3022	**Major Project** This subject provides a framework for you to solve practical problems, conduct research work and/ or develop studies, through a self-managed project. The scope of the subject includes project proposal, investigative studies, analysis, interpretation of results, written report, and presentation.	**6**
AVT2031	**Animal Genetics & Breeding** This subject is to provide basic theoretical knowledge and laboratory techniques in molecular genetics. It covers foundational concepts and their applications in genetics, including selective breeding, heredity, the nature	**4**

of deoxyribose nucleic acid (DNA), the central dogma of molecular biology and genomics.

Diploma Elective Cluster Subjects

Aquaculture

Subject Code	Subject	Credit Units
AVT3012	**Aquaculture Product Quality & Safety** This subject provides students with the knowledge and skill-based training in harvest and post-harvest processes and food product quality and safety. The importance of a good culture environment and postharvest technology on fishery product quality and safety will be emphasised. Innovative technology for enhancing aquatic health and better quality produce will be covered.	4
AVT3013	**Aquaculture Technology** This subject focuses on good aquaculture practices and management, culture systems, breeding, reproduction and technology important for sustainable aquaculture. Topics covered include water quality management, feed and feeding management, hatchery, larviculture, grow-out and broodstock, breeding and reproduction. Basic engineering principles and system design applicable for aquaculture will also be emphasised. Students will receive hands-on training in farm operation and management.	5

Veterinary

Subject Code	Subject	Credit Units
AVT3014	**Animal Reproduction & Development**	4

	This subject covers animal reproduction fundamentals and the care of common laboratory rodents and animals for breeding. Topics also include fertilization process, early embryonic development in vertebrates, sex determination and teratogenesis.	
AVT3015	**Animal Science & Technology** This subject covers knowledge and skills in the care of common laboratory rodents and animals for research; operation and maintenance of animal facility, animal necropsy, animal biosafety levels; disease prevention and control as well as occupational health and safety. Experimental design and statistical analysis in scientific research using laboratory animal will be introduced.	**5**

YEAR 1 YEAR 2 YEAR 3 **TPFUN**

You will also take this set of subjects that equips you with the crucial 21st-Century life skills you need to navigate the modern world as an agile, forward-thinking individual and team player.

TP Fundamentals (TPFun) Subjects

Subject Code	Subject	Credit Units
ASI3028	**Student Internship Programme** This structured programme is designed to link your learning with the real work environment. You will be placed in organisation(s) with opportunities to apply the concepts and skills acquired in the course of your study. Besides reinforcing technical concepts and mastering of skills in areas that you have been trained, the practical training will enable you to build important skills such as problem-solving, communication, teamwork, and to cultivate good attitude and a strong work ethic.	**16**

ATX1001	**Effective Communication** This subject introduces the fundamentals of effective communication. It also covers how to communicate with and convince an audience through writing and speaking tasks. The skills in this subject will include the application of strategies for communication, appropriate vocabulary, language features, visual aids, tone and style. The **M**essage, **A**udience, **P**urpose and **S**trategy (MAPS) framework will also be applied when planning and engaging in written and verbal communication. There will be opportunities to communicate and collaborate through active learning activities, apply digital and information literacy skills and build competence through self-directed learning.	**3**
ATX1002	**Professional Communication** This subject covers professional communication skills for the workplace and employability skills in the areas of career preparation. It covers communication and interpersonal skills, including effective virtual communication etiquette, and conducting oneself professionally in the workplace. In addition, essential career preparation skills such as resume writing and interview skills, needed to seek and secure work would be included. The **M**essage, **A**udience, **P**urpose and **S**trategy (MAPS) framework would also be applied when engaging in written and verbal communication. There will be opportunities to communicate and collaborate through active learning activities, apply digital and information literacy skills and build competence through self-directed learning.	**3**
GTP1301	**Current Issues & Critical Thinking** This subject covers current issues, including diverse local and global concerns, that will impact lives and may have critical implications for	**3**

	Singapore. There will be opportunities to build competence through self-directed learning, communicate and collaborate in active discussions and objectively analyse issues using digital and information literacy skills and critical thinking scaffolds.		
GTP1201	**Career Readiness** This subject focuses on personal management skills. It develops an understanding of one's career interests, values, personality and skills for career success. It covers the necessary knowledge, skills and attitudes needed to succeed in the workplace and achieve professional goals. There will be exposure to apply digital and information literacy skills, build competence through self-directed learning methods, and acquire the skills of being a lifelong learner.	**1**	
GTP1202	**Career Management** This subject focuses on career management skills. It covers the importance of workplace readiness skills to adapt and respond to the changing job market environment. Career ownership and continuous learning for lifelong employability will be emphasised. There will be exposure to apply digital and information literacy skills, build competence through self-directed learning, and acquire the skills of being a lifelong learner.	**1**	
AGS1002	**Global Studies** This subject provides essential skills and knowledge to prepare students for an overseas experience. They will examine the elements of culture and learn the key principles of cross-cultural communication. In addition, they will gain an appreciation and awareness of the political, economic, technological and social landscape to function effectively in a global environment. The subject prepares	**3**	

	students to be responsible global citizens and leaders who can contribute to the global community through effective communication and collaboration.		
GTP1302	**Guided Learning***	**3**	^
	The subject introduces students to the concepts and process of self-directed learning in a chosen area of inquiry. The process focusses on four stages: planning, performing, monitoring and reflecting. Students get to plan their individual learning project, refine and execute the learning plan, as well as monitor and reflect on their learning progress and project. The learning will be captured and showcased through a curated portfolio. The self-directed learning project will broaden and/or deepen a student's knowledge and skills. Students will enhance their problem solving and digital literacy skills through this subject.		
AIN1001	**Innovation & Entrepreneurship**	**2**	^
	The subject is designed for learners from all disciplines to embrace innovation in either their specialised field or beyond. Learners will be taught to apply the Design Thinking framework to develop problem statements, ideate and identify feasible solutions. Learners will be exposed to several tools for prototyping. In addition, commercial awareness will be imbued in learners through various innovation and entrepreneurship concepts or tools. This subject also prepares students to be self-directed lifelong learners who are digital and information literate. It nurtures communicative and collaborative citizens who can use objective analysis in problem-solving.		
GTP1101	**Leadership Fundamentals**	**2**	^
	This subject focuses on self-leadership based on the values of integrity, respect, and responsibility. Increasing awareness of self and		

	others will lay the foundations for personal and relationship effectiveness. Consequential thinking, clear articulation of personal values and visions, emphatic listening, and collaboration in serving others are some of the essential skills covered in this leadership journey. There will be opportunities to build and to apply the concepts of being a values-centred leader.		
GTP1102	**Leadership in Action** This subject focuses on Service Learning as an experiential platform to apply the tenets of Self and Team Leadership. Service Learning will be the capstone project for this subject, which will require an analysis of the diverse needs of the community, collaboration with community partners and demonstration of learning, including key elements of empathy. There will be opportunities to build and to apply the concepts of being a values-centred leader.	**1**	
LSW1002	**Sports & Wellness** The subject enables students to build a good foundation for healthy living. Students will have the opportunity to participate in hands-on practical sessions where they will experience and develop both physical and technical skills in their chosen sports or fitness activities. Through a structured curriculum that facilitates group participation, practice sessions and mini competitions, students will be able to build lifelong skills such as resilience, leadership, communication and teamwork. Physical activity sessions will also be supplemented by health-related topics that span the dimensions of health, such as diet, nutrition, stress and weight management, to provide students with a holistic approach to healthy living. This subject also prepares students to be self-directed and accountable for lifelong learning for good health.	**2**	

TGS1001	**Sustainability & Climate Action***	**3**	^
	This subject prepares students to be responsible global citizens and future leaders who can contribute to the global community. It introduces the topics of sustainability and explores how human societies can act to build a sustainable future. This subject focuses on the impact of climate change, potential solutions to climate change, and the future of the green economy from global and local perspectives.		

** Students must choose to take either **Sustainability & Climate Action** or **Guided Learning**.*

GRADUATION REQUIREMENTS

Cumulative Grade Point Average	min 1.0
TP Fundamentals Subjects	40 credit units
Diploma Core Subjects	73 credit units
Elective Subjects	min 9 credit units
Total Credit Units Completed	min 122 credit units